

## INDIAN RIVER INLET BRIDGE FACT SHEET

Route 1, Sussex County, Delaware  
January 26, 2011

Four bridges have been built over the Indian River Inlet connecting the communities of Rehoboth Beach (north) and Bethany Beach (south), Delaware. The first was a timber bridge built in 1934, which was replaced by a concrete and steel “moveable swing” bridge in 1938. Named the Charles W. Cullen Bridge after a famous Delaware lawyer and judge who sat on the State Highway Commission, portions of this bridge were washed away by an ice flow in 1948, requiring construction of a new concrete and steel “swing span” bridge in 1952. In 1965, the existing steel girder bridge was built, and was widened in 1975 to four lanes due to increasing traffic volumes.

In the 1980s, the Delaware Department of Transportation (DelDOT) found the inlet depth had increased to a depth of 50 feet near the bridge piers and excessive scouring of the bridge piers was occurring. This condition was temporarily offset by placing large boulders in the holes near the piers. Since that time, bridge safety has been constantly monitored as areas within the inlet have reached depths of as much as 100 feet.

A study done in 2001 recommended the existing bridge be replaced. In 2003, DelDOT contracted Figg Bridge Engineers to design a new bridge and approach roadways at the Indian River Inlet. In 2005, DelDOT cancelled the advertisement for a new bridge when it became apparent that the bids would exceed the budget for the project. Subsequently, DelDOT decided to use a design-build procurement process in an effort to obtain a more affordable bridge design and to reduce the overall duration of design and construction.

Ultimately, Skanska USA Civil Southeast, Inc. submitted the proposal with the highest technical score and lowest bid price. The \$150 million contract, which was within DelDOT’s budget, was awarded to Skanska in September 2008. Skanska mobilized the construction site and bridge construction began in earnest in February 2009.

The project is unique as it is one of only a few design-build contracts DelDOT has undertaken. With design-build, the design of the project occurs simultaneously with construction. This shortens the construction timeline and allows more flexibility in the design.

Some unique aspects of the new cable-stay bridge design are: a 45 feet clearance above the inlet; four pylon towers that rise 249 feet above the ground; 152 stay cables that provide support for the bridge eliminating the need for any pier supports in the inlet; a total bridge length of 2600 feet, with 900 feet of that consisting of the main span over the inlet. The bridge will consist of two travel lanes in each direction with a protected pedestrian walkway on east side of the bridge.

Other unique aspects include the sand bypass system that will be incorporated on the bridge to carry sand from the south side to the north side of the beach for beach replenishment efforts. A state-of-the-art fiber optic monitoring system is also being built into the bridge which will allow for increased monitoring and bridge safety.

The bridge is designed to withstand the harsh marine environment on the Delmarva Peninsula, including the ability to withstand sustained hurricane force winds of 140 mph, and the effects of salt air. The bridge is designed to have a lifespan of over 100 years with regular maintenance.

At this time the bridge cost is tracking under budget and the structure is projected to be open to traffic by the end of 2011. This is later than the original construction schedule indicated due to weather and other design/construction related delays. DelDOT is committed to ensuring the work progresses in a safe manner for both the workforce and the public and the finished product is of the highest quality.